

Unit 7

Day 3

General and Mixture Problems

Interest = Principle · rate · time

$$I = P \cdot R \cdot T$$

P = principal

R = rate

T = time

- 1) Anne Kelly received \$52,000 profit from the sale of some land. She invested part at 7.5% interest and the rest at 5.5% interest. She earned a total of \$3280 interest during the 1st year. How much did she invest at each rate?

$$\begin{array}{ccccccc} & \text{let } & x = & \text{amt inv. at } & 7.5\% (\$) \\ 31,000 = & 52,000 - x = & & \parallel & \parallel & \parallel & 5.5\% (\$) \end{array}$$

$$\begin{array}{lcl} \text{Amt earned} & + & \text{Amt earned} & = & \text{Total} \\ \text{at } 5.5\% & & \text{at } 7.5\% & & \text{earned} \\ .055(52,000 - x) + .075x & & & = & 3280 \\ & & x = 21,000 & & \end{array}$$

Mixture Problems

- 1) A pharmacist wishes to strengthen a mixture that is 10% alcohol to one that is 30% alcohol. How much pure alcohol should be added to 7 liters of the 10% mixture?

- 3) For a chemistry class, the instructor needs a 20% solution of potassium permanganate. She had a 15% solution on hand, as well as a 30% solution. How many liters of the 15% solution should she add to 3 liters of the 30% solution to get the 20% solution?

HOMEWORK:

p. 98-101: 1-15 (all), 28-38 (even)